

Application No.: 10/065,678

Docket No.: JCLA9038

**REMARKS****Present Status of the Application**

The Office Action rejected claims 1-4, 7-9 and 11-17. Specifically, claims 1-4, 7-9, 11-13 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (U.S. Patent 4,453,259) in view of Funderburk et al. (IEEE publication; hereinafter Funderburk) and further in view of Lin et al. (IEEE Transactions on circuits and systems, March 1995; hereinafter Lin). Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Funderburk and Lee et al. (Digital Communication; hereinafter Lee) and Lin. Applicants have amended claims 1 and 8, and further cancelled claims 7 and 11. Claims 1-4, 8-9, and 12-17 remain pending in the present application, and reconsideration of those claims is respectfully requested.

**Discussion of Claim Rejections under 35 USC 103**

Claims 1-4, 7-9, and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Funderburk and Lin. In this regard, the independent claims 1 and 8 are amended herein to define, among other distinguishing features, operations of *"the timing tracking process is temporary paused simultaneously while the interpolation point is changed and the timing tracking process is simultaneously awakened as the retraining process has accomplished."*

According to the 103 rejections, Examiner alleges Miller to US Pat 259', Funderburk et al. to asynchronous timing recovery for passband PS-FSE for single-chip V. 32 modems, and Lin et

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al. to adaptive nonlinear decision feedback equalization with channel estimation and timing recovery in digital magnetic recording systems to teach a retraining process. Applicants respectfully disagree with such rejections and believe none of cited prior arts taking singly or in-combination teaches retraining process.

First, Examiner states that "Miller does not disclose obtaining the channel impulse response, using the interpolated signal and channel impulse response to detect the digital data, temporarily pausing the timing tracking process"(page 5, lines 1-3 office action mailed on Oct. 6<sup>th</sup>, 2006). In order to fix these deficiencies of Miller's, Examiner further alleges that Funderburk et al. teach the timing tracking process optionally being temporarily stopped while performing the retraining process, and further stated that Applicant failed to see Funderburk et al. teaching such functions.

Applicants have compared Funderburk et al. with the present invention. Figure 3 and Figure 4 of Funderburk et al. do not teach function of retraining. The claimed invention needs to have a retraining process because the simplified interpolator is implemented; thus, it needs to have retraining process to compensate some loss of interpolation (see sec[0020]). Funderburk et al. teach different structural and functional of the system to perform the claimed invention of steps 300-310 in Fig. 3. There is no retraining whatsoever can be found in Funderburk et al.'s reference.

Furthermore, Examiner stated that "Funderburk discloses that the timing control is stopped during the training process" (See page 2, paragraph 3 Office Action mailed on Oct. 6, 2006). However, it should be realized that retraining process does not equal to training process. The retraining process is clearly shown in the procedure 314—317 of Fig. 3 of present invention.

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Moreover, Examiner seems to take the statement of Funderburk that "we do not attempt timing control in the first 200 symbol intervals" can be interpreted as that the first 200 symbol interval as timing control freeze and awaken after that period. However, Applicants would like to point out the difference. The claimed invention is that "the timing tracking process is simultaneously paused as the interpolation point is changed and the timing tracking process is simultaneously awakened as the retraining process is accomplished", which are recited in the independent claims 1 and 8. Unlike Funderburk's reference, it has to wait for the fixed first 200 symbol intervals and it does not even base on retraining either.

Lin et al. also failed to teach retraining process. Actually, all of applied references by Examiner are based on initial training process and none of cited prior arts teaches retraining basis. Thus, Applicant asserts that all cited prior arts taking singly or in-combination fail to teach "performing a retraining process to update the set of coefficients of the channel impulse response, according to the interpolated digital signal, wherein the timing tracking process is simultaneously paused as the interpolation point is changed and the timing tracking is simultaneously awakened as the retraining process is accomplished.", which is recited in claim

1. Similar limitation is recited in claim 8 as well.

By the present amendments with at the foregoing reasons, claims 1 and 8 have been distinct over the prior art references. For at least the same foregoing reasons, dependent claims 2-4, 9 and 12-17 are distinct over the prior art references.

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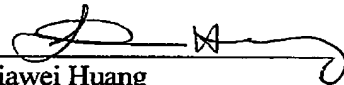
**CONCLUSION**

For at least the foregoing reasons, it is believed that all the pending claims 1-4, 6-9, 12-17 of the invention patentably define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Date: 1/8/2007

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